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THE ART AND TECHNIQUE
OF MODERN GLASS

THE COOPER UNION MUSEUM
FOR THE ARTS OF DECORATION
COOPER SQUARE, NEW YORK

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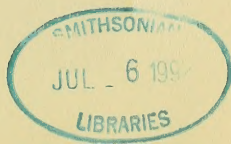
NOTES ON THE DEVELOPMENT OF MODERN GLASS

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THE MAKING of glass is no new art. Glass has been made for over three thousand years by virtually the same process and with the same materials. It is a living art; as practiced today it combines master-craftsmanship, great facility in design and, usually, the production-line techniques of the machine age. In no other art is the old, traditional way of working as completely combined with the new. Yet we are so surrounded by glass in all its forms in our everyday life, and so familiar with it, that it is viewed for the most part without knowledge or even curiosity.

The history of glass has been traced many times, but in museums the world of modern glass has seldom been displayed. We are attempting to show, by exhibiting the decorative art of glass from many countries and the many technical uses of glass, the progress that has been made in our own time.

Glass was discovered in Egypt more than three thousand years ago; not, as Pliny would persuade us, by traders cooking over sodium blocks from their cargo on a sandy shore, but through a long process of discovery that took hundreds of years. Glass was used at first as a vitreous glaze to coat articles of stone or clay. Gradually it was found that if a sand core was made and layers of the glaze built up thickly over it, it was possible to remove the core, leaving a hollow vessel of pure glass. The rough core of sand was formed on a metal rod and shaped to the interior form of the vessel to be made; this was dipped into the molten glass until the necessary degree of thickness



was obtained. The glaze was made from quartz sand which had a high lime content, and soda, the two being fused at a low temperature. These early attempts at manual fashioning of glass resulted in an opaque, highly colored ware.

The use of the blowpipe in making glass was discovered by the Phoenicians just before the Christian Era, and at that time glass took on the qualities of transparence and clarity so highly valued today. Moulds had been used by potters in making clay objects and were now adapted to glass-blowing. The resemblance to jewels and to rock crystal was soon noted and glass was cut to bring out its beauty. The Portland Vase, with its surface cut in the cameo technique, is one of the best-known examples of one type of early glass-cutting.

Due to similarity in appearance, glass was and still is often called *crystal*, a somewhat confusing term. By agreed definition, this designation should not be applied unless the lead content is twenty-five to fifty per cent. of the weight of the material used in making the glass.

Transparent glass was used for windows, and rough blocks of glass for streets, as early as the time of the Roman Empire. With the fall of the Western Empire the art of glass was almost lost, only a few simple, crude vessels being made. In the East, Byzantium continued the making of glass, for a while quite Roman in character, but later developed a style embodying a use of gilding and enamels that was entirely different. The Syrians and Iranians also produced some excellent colored glass, and some of their work reached Western Europe through Spain and the Italian ports.

The art of glass-making gradually revived in Venice, under the influence of imports from the East, and for many centuries Venice was the leading centre of the glass industry in Europe. Such importance was attached to Venetian supremacy in glass-making that at the end of the thirteenth century the industry was removed to the secure isolation of Murano, under the pretext of fear for fires

that might be caused by the glass furnaces, and the glass-blowers were forbidden under penalty of execution to leave the island. Even so, many escaped and made their way to other countries, induced by huge bribes, thus spreading the art and knowledge of glass in Europe. By the fourteenth century the use of glass for table utensils was common enough to allow drinking vases to be known as "glasses" no matter of what they were made.

Bohemia, in the sixteenth century, under the guidance of Rudolph II, eventually displaced the Venetian glass with its own ruby and carved glass. Bohemian glass was in turn surpassed, toward the end of the seventeenth century, when Irish and English glass-makers, led by George Ravenscroft, produced sparkling "flint glass" by adding lead oxide to the regular glass base. There came a gradual decline of interest in glass as an art through the following century and for over a long period of time work and designs were continued in the old familiar patterns that each country had developed.

One of the first industries in America was glass-blowing, which developed as it was found that the Indians would accept glass beads as a medium of exchange. A crude factory was set up at Jamestown in 1609 and glass-blowers were brought over from Europe. The market was soon glutted, beads lost all value and the factory was abandoned. Until the late eighteenth century, when Stiegel started his factory in Pennsylvania, American glass was so influenced by Europe that it had not developed any style of its own. Stiegel glass, while foreign in inspiration, had a distinctly American simplicity.

With the invention of the glass-pressing machine in Sandwich, Massachusetts, in 1827, the American technical contribution of mass-production methods was for the first time applied to the making of glass. Later in the century, in the 1880's, this country was turning out some of the best of the cut glass that was popular at that time. At the same period, Louis Tiffany became so interested in the strange iridescent quality of early Roman glass that he began experimenting

in his own glass factory and developed, in his "favrite" glass, a variety of colors overcast with a characteristic opalescence or iridescence that appealed to the taste of his day.

Glass as a medium for artistic expression was stirred to new life toward the end of the nineteenth century by Emile Gallé in France, and was developed and carried forward by many other talented French artists. René Lalique turned from the creation of jewelry to glass-making, using his knowledge as a sculptor and his interest in nature to explore the possibilities of decorative glass. Henri Navarre specialized in the beauty of polished surfaces with great depth in his underlying layer of glass. He thought of glass as a molten metal to be captured with all its light and color intact, and achieved a form of case glass to obtain this effect. Case glass is made by covering a layer of colored glass with a coating of clear glass, or vice versa; its qualities are frequently enhanced through cutting the outer coating in various designs to let the inner glass be seen.

Pâte de verre, a substance half-way between fired clay and translucent glass, has been developed by Albert Dammouse and Henri Cros; and François Décorchemont has taken advantage of its great density and lustrous depths to bring it into almost jade-like quality. Jean Sala was another of the authentic glass blower-designers, that is, a man who carried out his ideas in the actual blowing, often adding to his design as he blew, giving the glass a spontaneous freshness that the ancient blowers gave to their work.

Maurice Marinot may well be considered the master and the greatest genius of glass in our time. His first work was of transparent glass decorated with enamel. As he studied further the potentialities and very components of glass, he found it necessary to learn how to blow glass himself, and worked with crude, heavy masses of the material, embellishing the bubbles and imperfections until they became an integral part of the design. Later he used acid, not for

delicate etching but to eat out deep, bold designs enhancing his massive forms.

In Sweden and in Austria at about this time there came a revival of the clear, pure lead glass, beautifully engraved and etched. In Vienna the firm of J. and L. Lobmeyr, under the guidance of Josef Hoffmann, developed a clear, delicate, often attenuated ware that is without rival. Such artists as Ena Rothenberg and Stefan Rath advanced carving and engraving in decorative glass, aided by excellent glass-workers from Czechoslovakia. Starting at Orrefors in Sweden in 1915, Simon Gate and Edvard Hald made famous the heavy, colorless glass which they brought to a point of purity never before reached. Sculptural in quality, the surface is cut or engraved to enhance the crystal-like nature of the substance. *Graal* glass, a unique form of case glass, was developed by Orrefors, as was *Ariel* glass, another unique type. At the Kosta factory in Sweden work is done with the same high standards. Elis Berg and Ewald Dahlskog at Kosta were responsible for many new ideas which have been widely borrowed. A. D. Copier at the Leerdam factory in Holland worked along similar lines, and perfected the "Unica" glass, characterized by a clouded appearance resulting from the method used in annealing.

The modern standards of glass in America have been greatly influenced by Swedish achievements. Led by the Steuben firm that has done much to raise the standards of American glass in the past fifteen years, American glass-makers have for the most part turned out a clear, colorless glass, the best of which is free of imperfections even when produced in large quantity. Individual artists such as Maurice Heaton and Marianna von Allesch are continually experimenting with glass, and have produced interesting innovations. Although the country is still inundated with an excessive quantity of unnecessarily ugly objects made of glass, the example of good leadership in the field grows steadily stronger and it becomes possible

to hope that many past mistakes will be completely outgrown.

Glass-making and glass design and decoration are two quite different departments in the modern glass factory. In the earlier history of glass the blower was also the designer, a combination of functions that we still find in such masters as Marinot. Often this led to such masterpieces as the great period in Venice gave forth, but too frequently it resulted in mediocrity. The mass-production methods of modern industry almost inevitably require that the blower follow a blue-print drawing produced for him by a designer. While this tends to stifle any natural designing talent a glass-blower might develop, it is a safer and more reliable way to guarantee acceptable design in cases where production in quantity is imperative.

To understand modern glass we must first know how it is made. A pure, filtered sand is mixed with soda, and lime or lead in accordance with the formula of the particular type of glass. This "batch" is put into a huge clay crucible or fire-pot which is slid into the furnace and fused at a temperature of about 2500° F. The resulting molten material, rather like very thick taffy with a deep red glow, is glass in its liquid state. The clay pots must be constantly watched, as they are subject to flaking in the terrific heat and casting particles into the glass, which form opaque spots or "stones" in the clear crystal.

The process of blowing glass from this point is in the traditional manner of past milleniums. Even the glass-workers' tools are unchanged; and some, such as the pontil or "punky" stick used to take glass from or to the blowpipe of the gaffer, have their early Italian names. The tools are of wood or steel, in simple forms, with the high polish that comes from constant use and care. These tools, like those of any other exacting craft, have to be kept in excellent condition as any speck of rust or dirt would mar the glass.

Glass-workers operate in units of three to six workers supervised by a gaffer or head man. The gaffer rules his group with a firm hand,

watching every move made by a member of his crew. He puts the final touches on any piece of glass with the deft hand and keen eye that come from years at the craft. There will be many of these groups working at one time in a room, each a separate organization going about its own work.

The gatherer, or first man on the crew, gathers a mass of molten glass from the pot on a blowpipe and swings and roughly shapes the mass, cutting out imperfections, air bubbles and excess glass. The mass is then passed from man to man, each adding some work to the piece, shaping, blowing, returning the glass to smaller reheating furnaces called "glory holes," to keep the glass in pliable form. The glass must be constantly moved, twirled, blown and shaped as the molten form can quickly get out of hand. When the gaffer has finished and approved, the glass piece is taken to a Lehr, or oven, where an annealing or slow cooling process requires five to eight hours. When the glass has cooled off sufficiently it is inspected and if further decoration is required, it goes to the cutter, the etcher or the engraver who, working with dozens of small copper wheels, slowly and carefully cuts out the desired design.

To see a modern factory, equipped with the latest technical devices and machinery, and, in the midst of all this, a great room where glass-workers are making modern decorative glass in this timeless fashion is quite a startling experience. One feels transported to another age. The mammoth furnaces with their bubbling contents, the smaller glory holes with fires flaring out from all sides; men casually walking to and fro, twirling and shifting masses of red-hot glass, yet making progress with every movement, each acting his own role while contributing to the work of the team, and all ruled by the white-shirted, often white-haired gaffer: it is a scene that could be painted with justice by Pieter Brueghel. It is a rare thing to see men working with such a feeling for their craft in this machine age.

In the twentieth-century glass factory where anything from bottles to railroad lanterns may be made, the process is the same as is used for hand-blown pieces. The machines duplicate every action of the glass-blower in simplified version for simpler shapes. While moulds are used to form the glass, the glass has to be blown into the moulds, twirled, reheated and blown again, each operation requiring a different mechanical movement.

For color in glass, mineral compounds are added to the raw materials before fusing. Various compounds of copper make blues, greens and some reds. Manganese added will result in black and purple. Iron in different amounts makes yellow and all the colors previously mentioned. Tin makes opaque white; cobalt results in dark blue, and gold will produce reds, violet, yellow and brown. Here again the compounds are formulas worked out a thousand or more years ago.

In the machine age glass has come into its own in the technical field. Glass is used for scientific equipment. The Palomar lens, the greatest piece of glass-casting ever achieved, has been made by the Corning Glass Works and, having gone through several years of cooling, grinding and polishing, is on the last lap of its slow journey to the Mount Palomar Observatory in California; when it is at last installed, a dozen years after its first pouring, stars and planets never before seen by man will be observed with the help of this giant eye.

We have structural parts of modern architecture incorporating glass blocks to allow the maximum of light, a development advantageous in educational buildings as well as in dwellings. Glass has been spun into yarn and used as insulation, or woven into fireproof, waterproof, stainless material used in theatres and other public buildings. Heat-proof glass is used for everything from cooking utensils to wire casings. The electric light bulb and all its developments, such as radio tubes and fluorescent lighting, are made from glass, as is the ordinary but very vital thermometer. Progress is

being made in the manufacture of optical glass, a most important tool of modern science. Modern packaging of foods, liquids and medicines is for the most part of glass. For the rigid standards of purity of materials and efficiency in their handling which are demanded by modern science and industry, glass is no less suited than it was to the needs of personal adornment in ancient Egypt. Its very adaptability has led to many of the developments given it by modern ingenuity, and the expansion of its field of service still seems to us unlimited.

The exhibition is arranged in two sections. The introductory section is devoted to the technique of glass manufacture and to the technical and scientific applications of glass products. The raw materials from which glass is made are displayed together with the tools of the glass-blower. Various types of decorative and utilitarian glass are shown, accompanied by brief explanations of their characteristics and method of manufacture. A number of examples of the use of glass in modern science, industry and daily living complete this division.

The second and larger section of the exhibition displays glass as a medium of artistic expression. The fourteen cases in this area are arranged by country, and the objects in the cases are numbered in accordance with the Catalogue that appears on pages 12-14.

The display will be reinforced through morning and evening showings of American, British and French documentary films treating with various phases of glass manufacture. On Tuesday evenings at eight o'clock and on Wednesday mornings at eleven o'clock the British film, *Looking through Glass*, and the French film, *Un Grand Verrier*, will be shown; and on Thursday evenings and Friday mornings the American film, *Blowpipes*, and *Un Grand Verrier* will be projected. This schedule will continue throughout the run of the exhibition.

The Museum's exhibition, as a summary of the new varieties of work done in our own day, will perhaps present to the visitor a few things that are unfamiliar and many that are known through long experience. It may be hoped, however, that in showing the almost unlimited range of the uses to which glass may be put, and in assembling certain objects of recent manufacture which are conspicuously successful solutions of artistic and technical problems, the Museum is performing a service that will be of value to consumer, designer and manufacturer alike.

ALLEINE DODGE

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RICHARD E. MORSE

CATALOGUE OF THE ART SECTION

AUSTRIA

1. Decanter and Highball Glass, 1947; Hand-blown, cut; Designer, Adolf Loos
2. Vase, 1947; Hand-blown, engraved; Ena Rottenberg
3. Decanter, about 1940; Hand-blown; Josef Hoffmann
4. Bowl, about 1929; Moulded; Marianne Rath
5. Pitcher, about 1928; Hand-blown; Josef Hoffmann
6. Vase, 1947; Hand-blown, engraved; Old Tyrolean design
7. Vase, 1947; Hand-blown, cut; Stefan Rath
8. Vase, 1947; Hand-blown, cut, engraved; Prof. Powolny
- 9-13. Stemware, 1928-1947; Hand-blown; Josef Hoffmann
1-13, Manufactured by J. and L. Lobmeyr, Vienna, in their factory at Kanicky Senov, Czechoslovakia

FINLAND

14. Green Vase, 1947; Hand-blown; Goran Hongell
15. Green Vase, 1947; Hand-blown; Goran Hongell
14-15, Manufactured by the Karhula Company, Karhula
16. Amber Vase, 20th century; Hand-blown; Alvar Aalto
Manufactured at Arek

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17. Beaker, 20th century; Hand-blown, cut
18. Smoke Pitcher, 1947; Hand-blown
Manufactured by The Eda Glass Works, Värmland
19. Vase, 1947; Hand-blown, engraved; Nils Kjellander
20. Sherbet Glass (Toronto Pattern), 1947; Hand-blown
21. Highball Glass (Toronto Pattern), 1947; Hand-blown
19-21, Manufactured by The Trelleborg Glass Works
22. Vase, 20th century; Hand-blown "Grael" glass; Edvard Hald
23. "St. Francis" Vase, 20th century; Hand-blown, engraved; Viktor Lindstrand
24. "Pearl Diver" Vase, about 1935; Hand-blown, engraved; Viktor Lindstrand
25. Bowl with Dish, 20th century; Hand-blown, engraved, Simon Gate

26. Vase, 20th century; Hand-blown "Ariel" glass; Edvin Ohrström
27. Decanter: "Susanna and the Elders," about 1924; Engraved; Edvard Hald
28. Rectangular vase, 1934; Cut incavo; Viktor Lindstrand
29. Vase, about 1935; Hand-blown, cut; Simon Gate
30. "Serenade" Vase, 20th century; Hand-blown, engraved; Edvard Hald
22-30, Manufactured by Orrefors Bruks A.-B., Orrefors
31. Decanter, 1937; Hand-blown; Elis Bergh
32. Vase, 1938; Cut, engraved; Elis Bergh
33. Goblet (Tyreso Pattern), about 1940; Hand-blown; Elis Bergh
34. Goblet (Bernadotte Pattern), 1934; Hand-blown; Elis Bergh
35. Smoke Decanter, 1938; Hand-blown; Elis Bergh
36. Highball Glass (Ardene Pattern), 1938; Hand-blown; Royal A. Hickman
37. Goblet (Klingspor Pattern), 1938; Hand-blown; Elis Bergh
38. Vase, 1942; Hand-blown, colored between two layers of glass; Elis Bergh
39. Vase, 1939; Hand-blown, cut; Elis Bergh
40. Vase, 1937; Cut, engraved; Elis Bergh
41. Vase, 1946; Hand-blown "cased" glass, cut; Elis Bergh
42. Vase, 1942; Hand-blown; Elis Bergh
31-42, Manufactured by Kosta Glasbruk, Kosta

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43. Crescent Salad Plate, 1947; Hand-pressed lime glass
44. Ice Dish, 1947; Hand-pressed lime glass
45. Three Liners for Ice Dish; Hand-pressed lead glass
43-45, Manufactured by Fostoria Glass Company, Moundsville, West Virginia
46. Square Vase, 1947; Hand-blown into mould
47. Pair of Candlesticks, 1947; Hand-blown into mould
48. Vase, 1947; Hand-blown into mould
49. Bear, 1947; Hand-blown into mould
46-49, Manufactured by Viking Glass Company, New Martinsville, West Virginia
50. Oval Bowl, 1947; Hand-blown
51. Seafood Cocktail Glass, 1932; Hand-blown; Arthur J. Bennett

- 50-51, *Manufactured by Cambridge Glass Company, Cambridge, Ohio*
52. Candy Jar ("Tiffin" Glass), 1947; Hand-blown; C. W. Carlson
53. Decanter ("Tiffin" Glass), 1943; Hand-blown; C. W. Carlson
- 52-53, *Manufactured by United States Glass Company, Tiffin, Ohio*
54. Two Square Plates, 1937; Hand-pressed; Royal A. Hickman
55. Goblet and Sherbet Glass, 1937; Hand-blown; Royal A. Hickman
56. Old Fashioned Glass, 1947; Hand-blown; Horace King
57. Highball Glass, 1947; Hand-blown; Horace King
58. Ice Tub, 1947; Hand-blown; Horace King
- 54-58, *Manufactured by A. H. Heisey and Company, Newark, Ohio*
59. Tumbler, 1947; Machine-blown; F. S. Barbiers
60. Sherbet Glass, 1947; Machine-blown; F. S. Barbiers
61. Footed Cocktail Glass, 1947; Machine-blown; F. S. Barbiers
- 59-61, *Manufactured by Anchor Hocking Glass Corporation, Lancaster, Ohio*
62. Amethyst Plate, 1945; Hand-blown; Carl and Stephen Erickson
63. Old Fashioned Glass and Pestle, 1947; Hand-blown; Carl and Stephen Erickson
64. Bowl, 1945; Hand-blown; Carl and Stephen Erickson
- 62-64, *Manufactured by Erickson Glass Works, Ohio*
65. Cream Pitcher, 1945; Hand-blown
66. Candy Dish, 1943; Hand-blown
67. Ashtray, 1938; Hand-blown
68. Two Dolphins, 1940; Hand-blown
69. Perfume Bottle, 1939; Hand-blown
70. Cruet, 1947; Hand-blown
71. Bowl, 1937; Hand-blown
72. Bowl, 1942; Hand-blown
73. Highball Glass, 1944; Hand-blown
74. Old Fashioned Glass, 1947; Hand-blown
75. Cocktail Glass, 1947; Hand-blown
76. Three-piece Set: "The Sea, The Forest and The Desert," 1947; Hand-blown, engraved; Designed by Sidney Waugh, engraved by Joseph Libisch
- 65-76, *Designed by the Design Department of Steuben Glass, New York, and manufactured by Steuben Division, Corning Glass Works, Corning, New York*
77. Glass Plate, 1947; Painted under glass; Marianna von Allesch
78. Glass Plate, 1947; Painted under glass; Marianna von Allesch
79. Glass Plaque for a Table Top, 1946; Painted under glass; Marianna von Allesch
80. Color Figures of an Armadillo, a Woman and a Tree, about 1939; Marianna von Allesch
- 77-80, *Designed and Manufactured by Marianna von Allesch, New York*
81. Vase, 1942; Hand-blown; Marianna von Allesch
- Manufactured by Gundersen Glass Works, for Kensington, Inc., New Kensington, Pennsylvania*
82. Vase, about 1932; Hand-blown
83. Vase, about 1932; Hand-blown
- 82-83, *Manufactured by Imperial Glass Corporation, Bellaire, Ohio*
84. Glass Table, 1947; Plate Glass
- Manufactured by H. H. Turchin Company, New York*
85. "Moth-wing" Bowl, 1939; Hand-blown; Maurice Heaton
- Manufactured by Maurice Heaton, West Nyack, New York*
86. Pitcher and Two Glasses, 1947; Hand-blown
- Manufactured for Frederik Lunning, Inc., New York*
87. Glass Coffee Table, 1947; Plate Glass and Birch; Isamu Noguchi
- Manufactured by Herman Miller Furniture Company, New York*
88. Highball Glass, 1947; Hand-blown
89. Vase, 1947; Hand-blown
90. Vase, 1947; Hand-blown, cut
91. Decanter, 1947; Hand-blown
92. Ashtray, 1947; Hand-blown
- 88-92, *Designed and Manufactured by Libbey Glass, Division of the Owens-Illinois Glass Company, Toledo, Ohio*
93. Green Compote, 1947; Hand-blown
94. Pair of Candlesticks, 1947; Hand-blown
95. Vase, 1947; Hand-blown
- 93-95, *Manufactured by Blenko Glass Company, Milton, West Virginia*
96. Plate, 1942; Bent Glass
- Manufactured by A. L. Hirsch and Company, Inc., New York*
97. Wine Glass, 1938; Hand-blown
98. Goblet, 1938; Hand-blown
- Manufactured by Seneca Glass Company, Morgantown, West Virginia*

NETHERLANDS

99. Melon-shaped Vase, 20th century; Hand-blown "Unica" glass; A. D. Copier
100. Bowl, 1947; Hand-blown, A. D. Copier
101. Decanter and Glass, 1947; Hand-blown; A. D. Copier
102. Vase, 1947; Hand-blown "Unica" Glass; A. D. Copier
103. Bowl, 20th century; Hand-blown
104. Two Glasses, 20th century; Hand-blown

99-104, *Manufactured by N. U. Glasfabriek, Leerdam*

GERMANY

- 105. Small Bowl, 20th century; Frosted crystal
- 106. Vase, 20th century; Cut and frosted; Wilhelm von Eiff
105-106, *Manufactured at Stuttgart*

BELGIUM

- 107. Decanter and Glass, 1947; Hand-blown
- 108. Vase (Formose Pattern), 1947; Cased glass, cut
- 109. Pair of Candlesticks, 1947; Hand-blown
107-109, *Manufactured by Val St. Lambert Glass Company*
- 110. Centrepiece, "Louis XIV," 1947; Etched and sand-blasted; Paula Ingrand

CZECHOSLOVAKIA

- 111. Vase; Hand-blown, cut; Pitt Petri
- 112. Bowl; Hand-blown into mould, cut
- 113. Vase; Hand-blown

FRANCE

- 114. Vase, 20th century; Moulded, frosted; René Lalique
Manufactured by René Lalique et Cie, after design by René Lalique
- 115. Vase, 20th century; Moulded opalescent glass
Designed and executed by René Lalique
- 116. Vase, 20th century; Hand-blown
Designed and executed by Henri Navarre
- 117. Vase, 20th century; Hand-blown
Designed and executed by Maurice Marinot
- 118. Vase, 20th century; Hand-blown
Designed and executed by Maurice Marinot
- 119. Vase, 20th century; Hand-blown
Designed and executed by Henri Navarre
- 120. Vase, 20th century; Moulded and etched
Designed and executed by Daum Brothers Glass Works, Nancy

- 121. Decanter and Glass (Michelangelo Pattern); Hand-blown, etched
Manufactured by Compagnie des Cristalleries de Baccarat
- 122. Bowl, 20th century; Hand-blown, etched
Designed and manufactured by François Décorchemont
- 123. Bowl, 20th century; Hand-blown, etched
Designed and manufactured by François Décorchemont
- 124. Vase, 20th century; Hand-blown
Designed and executed by André Thuret

MEXICO

- 125. Decanter and Glass; Hand-blown
- 126. Pitcher; Hand-blown
- 127. Martini Mixer and Glasses; Hand-blown
125-127, *Manufactured by Avalos Bros., Guadalajara and Mexico City*

ITALY

- 128. Dish, 20th century; Hand-blown
Manufactured by Venezia-Murano Co., Murano
- 129. Ashtray; Hand-blown
Manufactured by S. A. Venini, Murano
- 130. Fish ("Salmoni"); Hand-blown; Prof. Scarpa-Croce
Executed by Alfredo Barbini for Vamsa, Murano

ENGLAND

- 131. Compote; Hand-blown
- 132. Bowl; Hand-blown, cut
- 133. Decanter and glasses (Tamara Pattern); Hand-blown, engraved, cut
131-133, *Designed and manufactured by Stuart and Sons, Ltd., Stourbridge*
- 134. Goblet; Hand-blown
Manufactured by Thomas Webb and Sons, Stourbridge
- 135. Vase; Hand-blown
Manufactured by T. Webb and Corbett, Stourbridge

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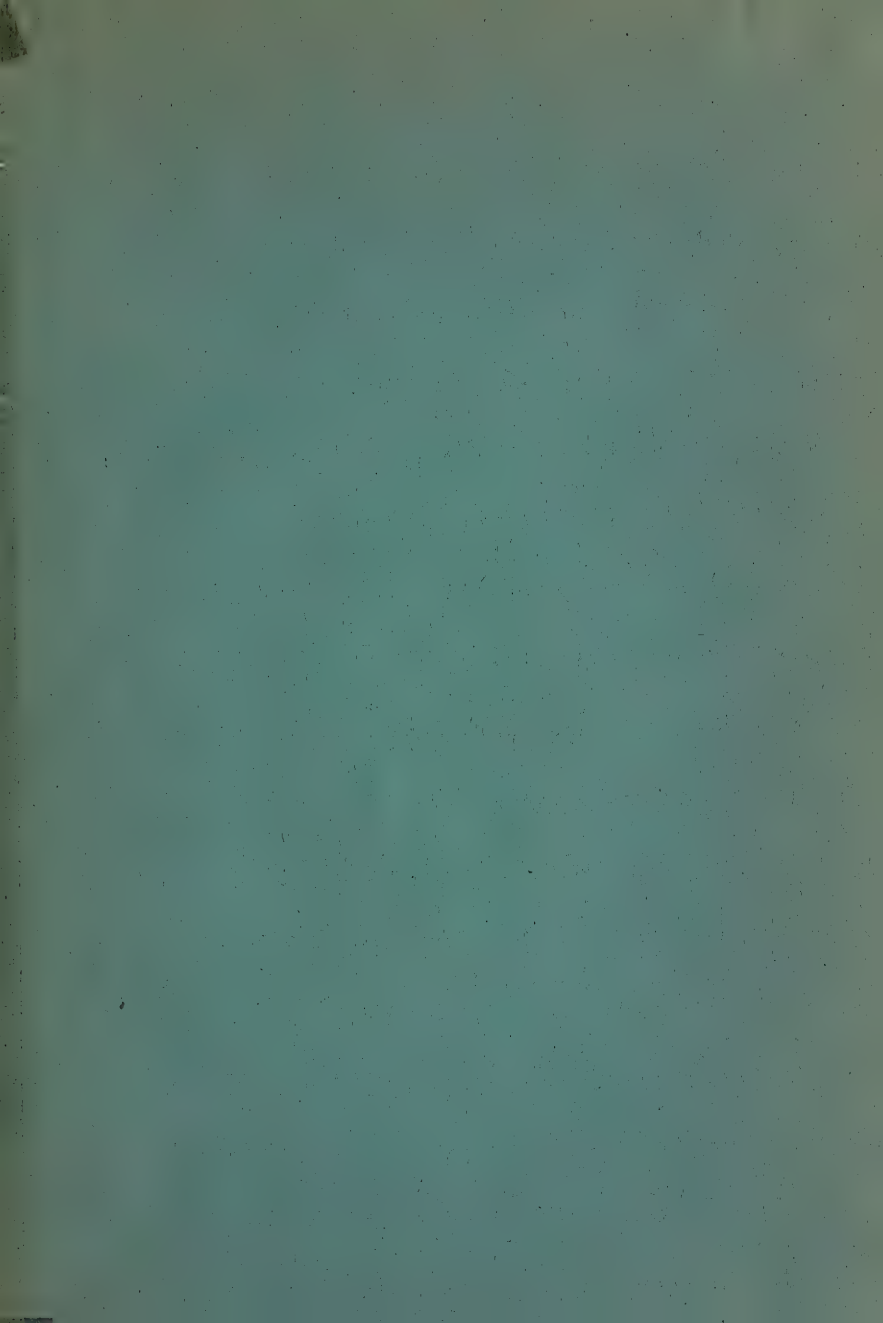
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